

REMARKS

Claims 1-91 are pending in this application. Claims 6, 7, 11, 12, 14-17, 22-24, 26, 34-40, 42-46, 49, 50, 53-58, 62-65, 68, 76-83, 85, and 89-91 have been withdrawn from consideration as being drawn to a non-elected invention.

Claims 1, 19, 20, 27-29, 32, 47, 59, 66, 67, 69, 70, 74, and 84, have been amended and claims 5, 18, 31, 33, 73, 75, 86 and 87 have been cancelled without prejudice. While Applicants believe that the originally presented claims are patentable over all of the art cited in the Office Action as well as all other references submitted by Applicants, the claims have nonetheless been amended or cancelled as follows in order to expedite the application toward allowance. The amendments and cancellations are therefore made without prejudice or disclaimer, and Applicants reserve the right to pursue the original scope of the claims as provided prior to the cancellation or amendments, such as through continuation practice. Support for the amendments can be found throughout the specification and in the claims as filed. Specifically, support for the phrase “surface adapted to be in optical communication with a lamp” can be found on page 3, lines 27-28, and page 11, lines 24-25. Support for the phrase “configured such that the first surface is smaller than the second surface” can be found on page 3, lines 27-28 and page 11, lines 24-25. Support for the phrase “configured to concentrate the light passing therethrough” can be found at page 11, lines 19-23 and page 27, lines 20-24. Support for the phrase “adapted to deliver a beam of light with a dimension greater than 10 mm to the patient’s skin” can be found on page 15, lines 20-23, and page 16, lines 28-29. Support for the phrase “reflective mechanism” can be found on page 7, lines 26-29. Accordingly, no new matter has been added by the proposed amendments.

Applicants respectfully traverse the Examiner’s rejections and request reconsideration of the application in view of the amendments made above and the remarks that follow.

Rejections under 35 U.S.C. § 101

Claims 27-30, 32 and 74 are rejected under 35 U.S.C. 101 because the claims explicitly recite the body.

As suggested by the Examiner, Applicants have amended claims 27-29, 32 and 74 to clarify the invention.

Rejections under 35 U.S.C. § 112, 1st paragraph

Claims 5 and 18-20 are rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The Examiner states that it is unclear how claim 18 further limits claim 1 and unclear how claim 5 further limits claim 4. Applicants thank the Examiner for pointing out this duplication. In response, claims 5 and 18 have been cancelled. In addition, the Examiner states on page 4 of the office action that the rejections drawn to the duplication of claims 19-20 are withdrawn. Accordingly, the Examiner is respectfully requested to withdraw the indefiniteness rejection.

Rejections under 35 U.S.C. § 102(b)

Claims 1-5, 8, 9, 13, 18-21, 25, 27, 28, 30, 32, 41, 47, 48, 51, 59-61, 66, 67, 69, 70, 74 and 84 are rejected under 35 USC § 102(b) as being anticipated by Hollnagel. Based on the amendments and the following remarks, Applicants respectfully request reconsideration and withdrawal of the anticipatory rejections.

As amended, Applicants' invention relates to an apparatus for performing a procedure on a treatment area of a patient's skin. The apparatus includes a lamp, a waveguide adapted to be in optical communication with the patient's skin and a mechanism for directing photons from the lamp through the waveguide to the patient's skin to minimize photon leakage. Applicants' specification describes various forms of waveguides (See, for example, page 3, lines 27-32 of the Specification). In some embodiments of the invention, the waveguide can be a "concentrator waveguide" with walls which angle in so that the skin-contacting surface of the waveguide is smaller than

the light-receiving side of the waveguide (see Specification page 11, lines 21-25). For example, the waveguide may be in the form of a cut right-angle pyramid (Fig.15) or a curved pyramid (Fig.16) prism. This “concentrator waveguide” provides increased intensity of the fluence from a lamp on the skin surface (see Specification, page 27, line 15). In addition, the invention recognizes that beam dimensions greater than 10 mm are advantageous for treatment of deep targets in the skin. Wide beams are advantageous since they maximize the ratio of heat production on a melanin target (in the skin at a depth) to heat production at the basal layer and also achieve uniformity of illumination of the target at depth (See, Specification page 15, line 28 through page 16, line 4, and page 16, lines 6-9).

In contrast, the Hollnagel reference simply discloses a dental device, containing a source of radiation and a long slender quartz rod, which is covered except at its ends with a coat of a metallic reflective material, for conveying the rays from the source.

The Hollnagel reference does not teach or suggest using a waveguide *configured to concentrate the light passing therethrough*, as recited by independent claims 47 and 70, or using a waveguide configured such that the *first surface*, which is adapted to be in optical communication with the patient’s skin, *is smaller than the second surface*, which is adapted to be in optical communication with a lamp, as required by independent claims 1, 59, 66, 67, 69, and 74 (and, dependent claims dependent therefrom). Furthermore, the Hollnagel reference does not recognize the advantages of beams having a dimension greater than 10 mm, as are disclosed by the Applicants’ Specification (See, for example, page 15, line 20 through page 16, line 29). As amended, independent claims 1, 47, 59, 66, 67, 69, 70, 74, and 84 (and, hence, dependent claims dependent therefrom) recite that the apparatus is “*adapted to deliver a beam of light with a dimension greater than 10 mm to the patient’s skin.*”

Hollnagel does not teach or even suggest that the waveguide can be any shape other than a rod or that the beam should have a dimension *greater than 10 mm* in length and/or width to enhance the uniformity of the optical output and maximize the ratio of heat production on a melanin target in the skin at a depth to the heat production at the

basal layer. Because Hollnagel does not disclose or teach the recited limitations of the claimed invention, Applicants believe that Hollnagel does not anticipate, or render obvious, the claimed invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection over Hollnagel.

Rejections under 35 U.S.C. § 103(a)

A. Claims 28-30 and 70-72

Claims 28-30 and 70-72 are rejected under 35 USC § 103(a) as being unpatentable over Currey in combination with Hollnagel. Applicants respectfully disagree with these rejections. Based on the claim amendments and following remarks, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 28-30 and 70-72.

Currey discloses a device with a vacuum-cup through which radiation may be applied to the portion of the body within the cup. Hollnagel discloses an instrument containing a source of radiation and a quartz rod, which is coated with a metallic reflective material, for conveying the rays from the source. However, neither Currey nor Hollnagel teach or suggest using a waveguide *configured to concentrate the light passing therethrough*, as recited by claims 70-72, or using a waveguide configured such that the *first surface*, which is adapted to be in optical communication with the patient's skin, is *smaller than the second surface*, which is adapted to be in optical communication with a lamp, as required by claims 28-30.

Hence, both Currey and Hollnagel fail to meet all of the limitations of claims 28-30 and 70-72. Because both Currey and Hollnagel do not disclose or teach all of the limitations of the claimed invention, Applicants believe that the references do not anticipate or render obvious the claimed invention and respectfully request that the Examiner reconsider and withdraw the rejections under Currey and Hollnagel.

B. Claims 1, 4, 10, 47, and 52

Claims 1, 4, 10, 47, and 52 are rejected under 35 USC § 103(a) as being unpatentable over Anderson et al. ('041) in combination with Hollnagel. Applicants respectfully disagree with these rejections. Based on the following remarks and claim amendments, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1, 4, 10, 47, and 52.

As discussed above, the Hollnagel reference does not teach or suggest using a waveguide *configured to concentrate the light passing therethrough*, as recited by claims 47 and 52, or using a waveguide configured such that the *first surface*, which is adapted to be in optical communication with the patient's skin, *is smaller than the second surface*, which is adapted to be in optical communication with a lamp, as required by claims 1, 4, and 10. Furthermore, the Hollnagel does not recognize the advantages of beam widths greater than 10 mm and thus does not teach or suggest that the apparatus is "*adapted to deliver a beam of light with a dimension greater than 10 mm to the patient's skin*" as recited by independent claims 1 and 47, and, dependent claims 4, 10 and 52.

The discrepancies of Hollnagel are not overcome by combination with Anderson et al. ('041). Anderson et al. ('041) discloses a laser illuminator including a differential optical radiator and a laser fiber with a diffusively reflective coating disposed within the differential optical radiator. However, neither Anderson et al. ('041) nor Hollnagel teach that the waveguide can have walls which angle in so that the skin-contacting surface of the waveguide is smaller than the light-receiving side of the waveguide in order to concentrate the fluence of the lamp.

Since neither Anderson ('041) nor Hollnagel disclose or teach all of the limitations of the claimed invention, Applicants believe that the cited references do not anticipate or render obvious the claimed invention and respectfully request that the Examiner reconsider and withdraw the rejections of claims 1, 4, 10, 47, and 52.

C. Claims 86 and 87

Claims 86 and 87 are rejected under 35 U.S.C 103(a) as being unpatentable over Anderson et al. ('844) in combination with Grove et al. Applicants have cancelled claims 86 and 87 rendering this rejection moot.

CONCLUSION

In summary, the above-identified patent application has been amended and reconsideration is respectfully requested for all the reasons set forth above. In the event that the amendments and remarks are not deemed to overcome the grounds for rejection, the Examiner is kindly requested to telephone the undersigned representative to discuss any remaining issues.

Respectfully submitted,

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